What to Study
DNA and Chromosomes Unit

Be able to define and understand the following terms:

- Histones
- Nucleosome
- Chromatin
- Semiconservative replication
- Initiation site
- Replication fork
- RNA primer
- Okazaki fragments
- Cytogenetics
- Karyotype
- Metacentric
- Submetacentric
- Acrocentric
- Polyploid
- Aneuploid
- Monosomy
- Trisomy
- Nondisjunction
- Deletion
- Duplication
- Translocation
- Translocation carrier
- Robertsonian translocation
- Reciprocal translocation
- Insertional translocation
- Inversion
- Paracentric inversion
- Pericentric inversion
- Isochromosome
- Ring chromosome
- Uniparental disomy

Be able to do the following:

- Explain the experiments conducted by the following scientists and their contributions toward identifying the structure of DNA
    - Miescher
    - Garrod
    - Griffith
    - Avery, MacLeod, McCarty
    - Hershey and Chase
    - Levene
    - Chargraff
    - Wilkins and Franklin
    - Watson and Crick
- Explain the structure of DNA including
    - The components of nucleotides
    - The difference between and examples of purines and pyrimidines
    - The orientation of the sugar-phosphate backbone
    - Base-pairing rules
- Explain the order and role of the following enzymes at the replication fork
    - Helicase, Primase, DNA polymerase, Exonuclease, Ligase
- Explain what happens during DNA replication as DNAP works directionally
- Explain the conditions the result from autosomal AND sex chromosome aneuploids
- Complete a strand of DNA using the base-pairing rules, given its complementary strand